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* * * * * * * * * *   Welcome to STN International   * * * * * * * * * *

 NEWS  1          Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2          "Ask CAS" for self-help around the clock
 NEWS  3  Jun 03  New e-mail delivery for search results now available
 NEWS  4  Aug 08  PHARMAMarketLetter(PHARMAML) - new on STN
 NEWS  5  Aug 19  Aquatic Toxicity Information Retrieval (AQUIRE)
                  now available on STN
 NEWS  6  Aug 26  Sequence searching in REGISTRY enhanced
 NEWS  7  Sep 03  JAPIO has been reloaded and enhanced
 NEWS  8  Sep 16  Experimental properties added to the REGISTRY file
 NEWS  9  Sep 16  CA Section Thesaurus available in CAPLUS and CA
 NEWS 10  Oct 01  CASREACT Enriched with Reactions from 1907 to 1985
 NEWS 11  Oct 24  BEILSTEIN adds new search fields
 NEWS 12  Oct 24  Nutraceuticals International (NUTRACEUT) now available on STN
 NEWS 13  Nov 18  DKILIT has been renamed APOLLIT
 NEWS 14  Nov 25  More calculated properties added to REGISTRY
 NEWS 15  Dec 04  CSA files on STN
 NEWS 16  Dec 17  PCTFULL now covers WP/PCT Applications from 1978 to date
 NEWS 17  Dec 17  TOXCENTER enhanced with additional content
 NEWS 18  Dec 17  Adis Clinical Trials Insight now available on STN
 NEWS 19  Jan 29  Simultaneous left and right truncation added to COMPENDEX,
                  ENERGY, INSPEC
 NEWS 20  Feb 13  CANCERLIT is no longer being updated
 NEWS 21  Feb 24  METADEX enhancements
 NEWS 22  Feb 24  PCTGEN now available on STN
 NEWS 23  Feb 24  TEMA now available on STN
 NEWS 24  Feb 26  NTIS now allows simultaneous left and right truncation
 NEWS 25  Feb 26  PCTFULL now contains images
 NEWS 26  Mar 04  SDI PACKAGE for monthly delivery of multifile SDI results
 NEWS 27  Mar 20  EVENTLINE will be removed from STN
 NEWS 28  Mar 24  PATDPAFULL now available on STN
 NEWS 29  Mar 24  Additional information for trade-named substances without
                  structures available in REGISTRY
 NEWS 30  Apr 11  Display formats in DGENE enhanced
 NEWS 31  Apr 14  MEDLINE Reload
 NEWS 32  Apr 17  Polymer searching in REGISTRY enhanced
 NEWS 33  Jun 13  Indexing from 1947 to 1956 added to records in CA/CAPLUS
 NEWS 34  Apr 21  New current-awareness alert (SDI) frequency in
                  WPIDS/WPINDEX/WPIX
 NEWS 35  Apr 28  RDISCLOSURE now available on STN
 NEWS 36  May 05  Pharmacokinetic information and systematic chemical names
                  added to PHAR
 NEWS 37  May 15  MEDLINE file segment of TOXCENTER reloaded
 NEWS 38  May 15  Supporter information for ENCOMPPAT and ENCOMPLIT updated
 NEWS 39  May 16  CHEMREACT will be removed from STN
 NEWS 40  May 19  Simultaneous left and right truncation added to WSCA
 NEWS 41  May 19  RAPRA enhanced with new search field, simultaneous left and
                  right truncation
 NEWS 42  Jun 06  Simultaneous left and right truncation added to CBNB
 NEWS 43  Jun 06  PASCAL enhanced with additional data
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NEWS 44  Jun 20  2003 edition of the FSTA Thesaurus is now available
NEWS 45  Jun 25  HSDB has been reloaded

NEWS EXPRESS  April 4 CURRENT WINDOWS VERSION IS V6.01a, CURRENT
              MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
              AND CURRENT DISCOVER FILE IS DATED 01 APRIL 2003
NEWS HOURS    STN Operating Hours Plus Help Desk Availability
NEWS INTER    General Internet Information
NEWS LOGIN    Welcome Banner and News Items
NEWS PHONE    Direct Dial and Telecommunication Network Access to STN
NEWS WWW      CAS World Wide Web Site (general information)

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 * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 11:24:40 ON 08 JUL 2003

=> file reg

FILE 'REGISTRY' ENTERED AT 11:24:58 ON 08 JUL 2003
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:    7 JUL 2003  HIGHEST RN 544408-69-7
DICTIONARY FILE UPDATES:   7 JUL 2003  HIGHEST RN 544408-69-7

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> s zinc acetate
        133182 ZINC
        442485 ACETATE
L1          49 ZINC ACETATE
                 (ZINC(W)ACETATE)

=> d

L1   ANSWER 1 OF 49  REGISTRY  COPYRIGHT 2003 ACS
RN   444588-53-8  REGISTRY
```

CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with zinc diacetate and zinc di-2-propenoate (9CI) (CA INDEX NAME)

OTHER NAMES:

CN **Butyl methacrylate-zinc acetate-zinc acrylate copolymer**

MF (C8 H14 O2 . C3 H4 O2 . C2 H4 O2 . Zn)x

CI PMS

PCT Polyacrylic, Polyother

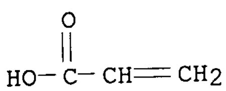
SR CA

LC STN Files: CA, CAPLUS

CM 1

CRN 14643-87-9 (79-10-7)

CMF C3 H4 O2 . 1/2 Zn

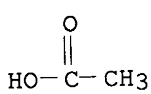


● 1/2 Zn

CM 2

CRN 557-34-6 (64-19-7)

CMF C2 H4 O2 . 1/2 Zn

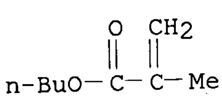


● 1/2 Zn

CM 3

CRN 97-88-1

CMF C8 H14 O2



1 REFERENCES IN FILE CA (1957 TO DATE)

1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

=> s zinc oxide

133182 ZINC

558956 OXIDE

```
L2        17429 ZINC OXIDE
                  (ZINC(W)OXIDE)

=> d

L2    ANSWER 1 OF 17429  REGISTRY  COPYRIGHT 2003 ACS
RN    541511-37-9  REGISTRY
CN    Antimony iron lead zinc oxide (Sb0.54Fe9.97Pb1.3Zn1.19O19) (9CI)
      (CA INDEX NAME)
MF    Fe . O . Pb . Sb . Zn
AF    Fe9.97 O19 Pb1.3 Sb0.54 Zn1.19
CI    TIS
SR    CA
LC    STN Files:   CAPLUS

   Component   |       Ratio        |     Component
               |                    |  Registry Number
==============+====================+===================
O              |         19         |     17778-80-2
Zn             |        1.19        |      7440-66-6
Sb             |        0.54        |      7440-36-0
Pb             |        1.3         |      7439-92-1
Fe             |        9.97        |      7439-89-6

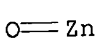
              1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

=> s zinc oxide/cn
L3             1 ZINC OXIDE/CN

=> d

L3    ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2003 ACS
RN    1314-13-2  REGISTRY
CN    Zinc oxide (ZnO) (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN    Zinc oxide (8CI)
OTHER NAMES:
CN    503R
CN    720C
CN    Activox C 80
CN    Actox 14
CN    Actox 16
CN    Actox 216
CN    AEE-Zn 601
CN    Amalox
CN    AZ-SW
CN    AZO
CN    AZO 22
CN    AZO 55
CN    AZO 66
CN    AZO 77
CN    Azo-B
CN    Azodox
CN    Biocide 3000D
CN    BTs 1
CN    BTs 1 (pigment)
CN    C 30
CN    C 30 (oxide)
```

CN Conductive Zinc Oxide No. 1
CN E 017
CN Electrox 2500
CN Elma 21
CN Elma 215
CN F 60
CN F 60 (antimicrobial)
CN FC-MI-W
CN Finex 25
CN Finex 50
CN Finex 50A
CN Finex 75
CN FINX 75
CN Flowers of zinc
CN FO 1020A
CN FX
CN FX (oxide)
CN FX-UFZ-D
CN GIAP 10
CN GinRei
CN Green Seal 8
CN Hubbuck's White
CN K-Fresh MZO
CN Kadox 15
CN Kadox 25
CN Kadox 515
CN Kadox 72
CN Kadox 911
CN Kadox 911C
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for DISPLAY
DR 8011-84-5, 8047-36-7, 8047-69-6, 8050-42-8, 8051-03-4, 56592-00-8, 57206-86-7, 185461-95-4
MF O Zn
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



63420 REFERENCES IN FILE CA (1957 TO DATE)
675 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
63518 REFERENCES IN FILE CAPLUS (1957 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=>

=> s zinc acetate/cn
L4 1 ZINC ACETATE/CN

```
=> d

L4   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2003 ACS
RN   557-34-6  REGISTRY
CN   Acetic acid, zinc salt (8CI, 9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Zinc acetate (6CI, 7CI)
OTHER NAMES:
CN   Galzin
CN   Siltex CL 4
CN   Zinc diacetate
CN   Zinc(II) acetate
DR   128514-83-0, 131853-00-4
MF   C2 H4 O2 . 1/2 Zn
CI   COM
LC   STN Files:   ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,
       BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
       CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE,
       ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB,
       IFIPAT, IFIUDB, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*,
       SPECINFO, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB
         (*File contains numerically searchable property data)
     Other Sources:   DSL**, EINECS**, TSCA**
         (**Enter CHEMLIST File for up-to-date regulatory information)
CRN  (64-19-7)
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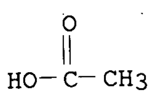


```
●1/2  Zn

            4882 REFERENCES IN FILE CA (1957 TO DATE)
             132 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
            4891 REFERENCES IN FILE CAPLUS (1957 TO DATE)
               4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

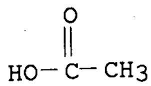
=> s zinc acetate dihydrate/cn
L5            1 ZINC ACETATE DIHYDRATE/CN

=> d

L5   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2003 ACS
RN   5970-45-6  REGISTRY
CN   Acetic acid, zinc salt, dihydrate (8CI, 9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   Zinc acetate dihydrate
CN   Zinc diacetate dihydrate
DR   56368-38-8
MF   C2 H4 O2 . H2 O . 1/2 Zn
LC   STN Files:   AGRICOLA, BEILSTEIN*, BIOBUSINESS, CA, CANCERLIT, CAPLUS,
       CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, DETHERM*, GMELIN*,
```

HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NIOSHTIC, PHAR,
PIRA, RTECS*, TOXCENTER, ULIDAT, USAN, USPATFULL
(*File contains numerically searchable property data)

CRN (64-19-7)



● H_2O

●1/2 Zn

328 REFERENCES IN FILE CA (1957 TO DATE)
8 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
331 REFERENCES IN FILE CAPLUS (1957 TO DATE)

=> file ca

FILE 'CA' ENTERED AT 11:27:35 ON 08 JUL 2003

FILE COVERS 1907 - 3 Jul 2003 VOL 139 ISS 2
FILE LAST UPDATED: 3 Jul 2003 (20030703/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE 'CA' ENTERED AT 11:27:35 ON 08 JUL 2003

```
=> s l3
L6        63422 L3

=> s l4 or l5
           4883 L4
            328 L5
L7         5170 L4 OR L5
```

```
=> s l6 and l7
L8          814 L6 AND L7

=> s colloid
L9        41322 COLLOID

=> s l8 and l9
L10           7 L8 AND L9

=> d bib,ab 1-7

L10  ANSWER 1 OF 7  CA  COPYRIGHT 2003 ACS
AN   135:202213  CA
TI   Stable photoluminescence of zinc oxide quantum dots in silica
     nanoparticles matrix prepared by the combined sol-gel and spray drying
     method
AU   Mikrajuddin; Iskandar, F.; Okuyama, K.; Shi, F. G.
CS   Department of Chemical Engineering, Hiroshima University, Kagamiyama,
     Higashi-Hiroshima, 739-8527, Japan
SO   Journal of Applied Physics (2001), 89(11, Pt. 1), 6431-6434
     CODEN: JAPIAU; ISSN: 0021-8979
PB   American Institute of Physics
DT   Journal
LA   English
AB   A sol-gel method was employed to produce a Zn oxide (ZnO) colloid
     consisting of ZnO nanocryst. particles with an av. diam. of .apprx.3 nm,
     and subsequently mixed with a SiO2 (SiO2) colloid.  The mixt.
     was finally spray dried to form a powder nanocomposite.  The green
     photoluminescence (PL) exhibited by the composite was very stable: the
     intensity, position, and shape do not change even after being aged over 30
     days.  Thus, the ZnO/SiO2 nanocomposite has a much improved PL stability
     over ZnO colloids, which is often found to undergo a significant red shift
     even after aging over a few days.  The authors' results are expected to
     have significant technol. implications.
RE.CNT  16    THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10  ANSWER 2 OF 7  CA  COPYRIGHT 2003 ACS
AN   134:244448  CA
TI   Preparation and Optical properties of nano-sized ZnO colloidal particles
     using NH3 gas as volatile catalyst
AU   Sakohara, Shuji; Honda, Sanae; Yanai, Yutaka; Anderson, Marc A.
CS   Department of Chemical Engineering, Hiroshima University,
     Higashi-Hiroshima, 739-8527, Japan
SO   Journal of Chemical Engineering of Japan (2001), 34(1), 15-21
     CODEN: JCEJAQ; ISSN: 0021-9592
PB   Society of Chemical Engineers, Japan
DT   Journal
LA   English
AB   Nano-sized Zn oxide (ZnO) colloids were prepd. by hydrolyzing Zn acetate
     soln. with NH3 (NH3) gas as a volatile catalyst, instead of metal
     hydroxides such as NaOH and LiOH, which were used previously.  The
     procedure consists of two major steps: (1) prepg. the precursor by
     reacting Zn acetate with EtOH, and (2) hydrolyzing the precursor to form
     the colloid.  Hydrolysis was performed by bubbling the desired
     compn. of NH3-N2 gas mixt. into the precursor for the desired time in an
     ultrasonic bath.  The hydrolysis conditions required for forming ZnO
     colloids such as the compn. of the NH3-N2 gas mixt. and bubbling times
     were examd.  In addn., optical properties such as luminescence and
     absorption of these ZnO colloids produced via this basic hydrolysis
```

procedure, and the effect of the residual NH_3 in the suspension on colloidal stability were examd. A crit. amt. of dissolved NH_3 to form nano-sized ZnO particles is existent, and the luminescence intensity largely depends on the gas compn. and the bubbling time. Residual NH_3 remaining in the suspension greatly affects colloidal stability. But, it could be easily removed by evapg. EtOH of the solvent under reduced pressure. The resulting ZnO powder could be re-dispersed quickly and completely into EtOH. The luminescence and absorption properties of the re-dispersed colloidal suspension were almost the same as those of the original suspension. Also, the re-dispersed ZnO suspension was absolutely transparent for more than one month at room temp. The colloidal stability is remarkably improved.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 3 OF 7 CA COPYRIGHT 2003 ACS

AN 130:57617 CA

TI Visible Luminescence and Surface Properties of Nanosized ZnO Colloids Prepared by Hydrolyzing Zinc Acetate

AU Sakohara, Shuji; Ishida, Masahiro; Anderson, Marc A.

CS Department of Chemical Engineering, Hiroshima University, Higashi-Hiroshima, 739, Japan

SO Journal of Physical Chemistry B (1998), 102(50), 10169-10175
CODEN: JPCBFK; ISSN: 1089-5647

PB American Chemical Society

DT Journal

LA English

AB Luminescence properties of nanosized Zn oxide (ZnO) colloids greatly depend on their surface properties. These surface properties in turn are largely detd. by the method of prepn. The procedure for producing ZnO colloids consists of 2 major steps:(1) prepg. the precursor by reacting Zn acetate with EtOH and (2) hydrolyzing the precursor to form the **colloid** by using LiOH. The sample colloids in this study were prepd. by hydrolyzing Zn acetate precursors contg. various concns. of Zn^{2+} with different concns. of LiOH. The luminescence properties were evaluated by the energy difference, .DELTA.E, between the band gap and the emission energy which were obtained from the onset of the absorption spectrum and the peak wavelength of the emission spectrum, resp. The surface properties of ZnO particles were studied using thermal gravimetric and IR techniques. ZnO particles produced via these procedures are not pure but have acetate (AcO-) groups on their surface. These groups originate from the reagent, Zn acetate. These acetate groups consist of a mixt. of unidentate, chelate, and bridging type structures. The amt. and structure of the acetate groups depend on the concns. of Zn^{2+} in the precursors and the amt. of LiOH used to hydrolyze these precursors. The luminescence properties, .DELTA.E, also changed with the concns. of Zn^{2+} and LiOH. Results, however, could be normalized to the concn. ratio of Zn acetate to LiOH, ZnAc/LiOH. The amt. of acetate groups on the ZnO particles prepd. at the same concn. ratio of ZnAc/LiOH were the same, and the IR spectra were also coincident with each other. Also, the visible luminescence properties, .DELTA.E, are also the same, for the ZnO colloids prepd. at the same concn. ratio of ZnAc/LiOH, and increased with increasing ratios. Probably the visible luminescence properties of ZnO particles depend on their surface properties which are in turn detd. by the concn. ratio of ZnAc/LiOH.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 4 OF 7 CA COPYRIGHT 2003 ACS

AN 129:296721 CA

TI From ZnO colloids to nanocrystalline highly conductive films
AU Hilgendorff, M.; Spanhel, L.; Rothenhausler, Ch.; Muller, G.
CS University of Wurzburg, Department of Chemistry and Pharmacy, Lehrstuhl fur Silicatchemie, Wurzburg, 97070, Germany
SO Journal of the Electrochemical Society (1998), 145(10), 3632-3637
CODEN: JESOAN; ISSN: 0013-4651
PB Electrochemical Society
DT Journal
LA English
AB Base-catalyzed hydrolysis and condensation of zinc acetate dihydrate in alc. environments yields highly concd. ZnO colloids with molarities near 3 M (50-70 wt. % solid content) and particle sizes between 3 and 6 nm. These solns. were optimized to be stable against coagulation for several months and to yield optically transparent 0.8-2 .mu.m thick films of variable electronic cond. in a single coating step. 2 Atom % Al3+ or In3+, if present in these nanoporous air-sintered layers, produce a high free-carrier concn. of about 6 .times. 1019 cm-3 without noticeable changes in sheet resistance Rsh > 106 .OMEGA. .box.-1, whereas sintering under vacuum or N2/H2 (90/10)-atm. results in Rsh values around 150 .OMEGA. .box.-1. Furthermore, infiltration of small ZnO clusters into the porous films increases the refractive index from 1.8 to 2.2 and substantially lowers Rsh to values of about 20 .OMEGA. .box.-1. From Hall measurements, the charge-carrier concn. has been detd. to be 2 .times. 1020 cm-3 and the corresponding electron mobility approaches values of about 9 cm2/V s. Electron microscopic investigations revealed that the ZnO/Al crystallites have a typical size of 10 .+-. 2 nm and are preferentially oriented with their (100) planes parallel to the substrate. Taking into account a preferential (002) orientation in phys. deposited highly conductive ZnO/Al films, it appears that the chem. control of nanocrystallite boundaries is more decisive than their orientation within the films.
RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 5 OF 7 CA COPYRIGHT 2003 ACS
AN 128:298175 CA
TI Process for coating of metal oxide on microbodies
IN Ito, Seishiro; Hagino, Seiji; Nankyo, Keishi
PA Nippon Aluminium Mfg. Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10081975	A2	19980331	JP 1996-255546	19960904
PRAI	JP 1996-255546		19960904		

AB The process involves (1) dissolving a metal salt in a polar org. solvent, (2) adding microbodies (e.g., org. polymer or inorg.) with functional groups on their surfaces to the soln., (3) dropwise adding a OH--contg. org. solvent to the soln., and (4) refluxing the soln. (by heating). The steps (3) and (4) may be simultaneously done. The process may be repeated to give .gtoreq.2 coatings of different metal oxides. The simple process with a simple app. gives a uniform coating, the thickness of which can be easily controlled.

L10 ANSWER 6 OF 7 CA COPYRIGHT 2003 ACS
AN 120:333585 CA
TI Size-dependent redox potentials of quantized zinc oxide measured with an

optically transparent thin layer electrode
AU Hoyer, P.; Weller, H.
CS Hahn-Meitner-Institut, Department of Small Particle Research Glienicker Strasse 100, Berlin, D-14109, Germany
SO Chemical Physics Letters (1994), 221(5-6), 379-84
CODEN: CHPLBC; ISSN: 0009-2614
DT Journal
LA English
AB The authors investigated spectroelectrochem. of quantum sized zinc oxide colloids of different sizes. The electron injection occurs from the metal electrode into the quantized states of the small particles. The measured size-dependent redox potentials are in accordance with quantum mech. particle-in-a-box calcns. Furthermore, the spectral changes occurring upon redn. of the particles are discussed and compared to the no. of electrons stored.

L10 ANSWER 7 OF 7 CA COPYRIGHT 2003 ACS
AN 113:220933 CA
TI Phosphors and method for treating the surface thereof
IN Tono, Hideo; Miyazaki, Tomohiro
PA Kasei Optonix, Ltd., Japan
SO Eur. Pat. Appl., 18 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 372560	A2	19900613	EP 1989-122598	19891207
	EP 372560	A3	19900822		
	EP 372560	B1	19950308		
	R: DE, GB, IT, NL				
	JP 02155983	A2	19900615	JP 1988-310648	19881208
	JP 2525656	B2	19960821		
	US 5126204	A	19920630	US 1989-446669	19891206
	CA 2004844	AA	19900608	CA 1989-2004844	19891207
	IN 173585	A	19940611	IN 1989-CA1017	19891208
	US 5167990	A	19921201	US 1991-784708	19911030
PRAI	JP 1988-310648		19881208		
	US 1989-446669		19891206		

AB Phosphors are described which are provided with a coating of ZnO formed in a suspension of the phosphor; the phosphors may addnl. comprise a material used to stabilized the attachment of the ZnO. Methods for prepg. the phosphors comprise a surface treatment process which entails maintaining a suspension of the phosphor which contains Zn ions at a predetd. temp. and adding an alk. soln. to the suspension to adjust the pH and induce formation of a ZnO **colloid** from which ZnO is attached to the phosphor particle surfaces.

```
=> s gel
L11      414304 GEL

=> s l6 and l11
L12         1283 L6 AND L11

=> s l9 and l12
L13            8 L9 AND L12

=> s l13 not l10
L14            7 L13 NOT L10
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=> d bib,ab 1-7

L14 ANSWER 1 OF 7 CA COPYRIGHT 2003 ACS
AN 136:221507 CA
TI Personal care compositions containing adhesive elastomeric polymer and inorganic **colloid**
IN Alwattari, Ali Abdelaziz
PA The Procter & Gamble Company, USA
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

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     PATENT NO.        KIND  DATE          APPLICATION NO.   DATE
     ---------------   ----  --------      ---------------   --------
PI   WO 2002015873      A2   20020228      WO 2001-US26233   20010822
         W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,
            CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EE, EE, ES,
            FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,
            KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
            MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ,
            TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,
            MD, RU, TJ, TM
        RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
            DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
            BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
      AU 2001085201     A5   20020304      AU 2001-85201     20010822
PRAI US 2000-643491     A    20000822
     WO 2001-US26233    W    20010822
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AB Compns. contg. a film-forming inorg. **colloid** and an adhesive elastomeric polymer for modifying the appearance of skin and/or hair are described. The compns. contain (i) about 0.1-60% of a film-forming inorg. **colloid**, such as silica, boehmite alumina, zirconium dioxide, zirconium polyanions, boron nitride, nickel hydroxide, nickel acetate, zinc hydroxide, and titanium dioxide, (ii) about 0.1-70% of an adhesive elastomeric polymer, e.g., styrene-isoprene elastomers, styrene-butadiene elastomers, styrene-ethylene/propylene-styrene elastomers, styrene-ethylene/butylene-styrene elastomers, terminal hydroxylated polyethylene/butylene elastomers, ethylene-propylene elastomers, polystyrene-co-polyethylene-propylene elastomers, styrene-acrylate elastomer, silicone elastomer, acrylic acid ester elastomer, etc., and (iii) about 10-99.8% of a dermatol. acceptable carrier, such as a diluent selected from water, aliph. hydrocarbons, aliph. alcs., silicones, ketones, esters, alcs., glycols, glycol ethers, and arom. hydrocarbons. The compn. is in a form of facial skin cosmetic, eye cosmetic, lip cosmetic, scalp hair styling aid, facial hair styling aid, moisturizer, wrinkle soothing serum, lotion, mascara, skin facial mask, eye **gel**, eye cream, lip **gel**, lip cream, cosmetic and foundation. The compn. further comprises a skin care active selected from retinoids, vitamin B3 compds., vitamin E compds., panthenol, titanium dioxide, and salicylic acid. For example, a skin serum contained colloidal silica 10%, styrene-acrylate copolymer 10%, petrolatum 5%, water 70%, and ethylene-acrylate available as EA209 pigment powder beads 5%. After application to the skin, an excellent, aesthetically-pleasing wrinkle-reducing effect of the compn. was obtained.

L14 ANSWER 2 OF 7 CA COPYRIGHT 2003 ACS
AN 134:104718 CA
TI Preparation of ceramic green body by reaction induced sol-**gel**

process
IN Zhang, Zhaoquan; Jiang, Dongliang; Tan, Shouhong
PA Shanghai Inst. of Ceramic Chemistry & Technology, Chinese Academy of Sciences, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 13 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1257851	A	20000628	CN 1999-125696	19991222
	CN 1092170	B	20021009		
PRAI	CN 1999-125696		19991222		

AB The process comprises prepg. slurry being stable at pH <4 or pH >8.5, adding 0.5-10 wt.% silica **colloid** or silicate soln., and regulating with curing agent to pH 4-8, where dispersing agent and binder can be added. Preferably, the silica **colloid** or silicate soln. is introduced by hydrolyzing tetra-Et orthosilicate or other orgs., or by dissolving and hydrolyzing SiC or Si3N4; the curing agent is Si3N4, AlN, Mg3N2, MgCO3, ZnO, urea, carboxylic ester, or lactone; 0.1-5 wt.% dispersing agent, such as polyacrylate, polymethacrylate, citric acid, or 2,3,4-trihydroxybenzoic acid, is added; and the binder is the latex of polyethylene glycol, polyacrylonitrile, polyacrylic acid, polymethacrylic acid, polyacrylamide, Poly-methacrylamide, styrene-butadiene copolymer, Al2O3, or ZrO2, and its addn. is 0.5-10 wt.%. The obtained green body has high strength.

L14 ANSWER 3 OF 7 CA COPYRIGHT 2003 ACS
AN 133:114019 CA
TI Effect of trace water on the property of ZnO **colloid**
AU Wang, Senlin; Lu, Xuerong
CS Coll. Chem. Eng., Huaqiao Univ., Quanzhou, 362011, Peop. Rep. China
SO Huaqiao Daxue Xuebao, Ziran Kexueban (2000), 21(2), 149-152
CODEN: HDZIEF; ISSN: 1000-5013
PB Huaqiao Daxue
DT Journal
LA Chinese
AB Taking methanol as solvent, the authors prepd. ZnO **colloid** by sol-**gel** method under the condition of excessive Zn2+. The effect of trace water addn. on the particle diam. and property of ZnO **colloid** is discussed. As shown by the results, the more water addn. during the process of prepn., the larger the particle diam. of ZnO **colloid**. Consequently, water addn. is able to control the size of colloidal particle; and water addn. will influence properties of ZnO **colloid** such as pH value, absorption spectrum and fluorescence spectrum. A discussion is devoted to mechanism of fluorescence emergence and to effect of water addn. on intensity of fluorescence. Water addn. is found to be important for avoiding photoproduced hole and photoproduced electron recombination.

L14 ANSWER 4 OF 7 CA COPYRIGHT 2003 ACS
AN 114:172136 CA
TI Semiconductor clusters in the sol-**gel** process: quantized aggregation, gelation, and crystal growth in concentrated zinc oxide colloids
AU Spanhel, Lubomir; Anderson, Marc A.
CS Water Chem. Program, Univ. Wisconsin, Madison, WI, 53706, USA
SO Journal of the American Chemical Society (1991), 113(8), 2826-33
CODEN: JACSAT; ISSN: 0002-7863

DT Journal
LA English
AB A new synthesis of ZnO wirtzite clusters (crystallite sizes 3-6 nm) is presented. This novel approach, employing ultrasound, allows one to produce relatively highly concd. 0.1 M Q-ZnO colloids within a few minutes. These stabilizer-free colloids remain in a dispersed state for weeks. They can be concd. further into stable syruplike liqs. (molarities of .apprx.1 M). Under the extreme concn. conditions (10 M Q-ZnO colloids) employed, ZnO alcogels are formed, and self-induced crystal growth occurs in the alcogels (sizes ranging between 1 and 5 mm). Furthermore, the small crystallites can be cast on porous or nonporous supports and fired to obtain ZnO ceramic membranes and thin films. All ZnO materials investigated were colorless and did not opalesce, while they exhibited a bright luminescence when exposed to UV light. Progressive concg. from dil. sols to the compact crystal state produced structured luminescence excitation spectra with magic max. ranging between 250 and 400 nm. In dil. suspensions, excitonic transitions in "primary" clusters can be obsd. In concd. suspensions, addnl. excitonic levels appear, attributed to the appearance of primary cluster aggregates. Gelation and crystal growth produce further excitonic levels. This process is explained as a growth of secondary cluster aggregates. One can destroy the crystals in an ultrasound field followed by diln. of the alcogels until the original spectroscopic properties from primary clusters are restored. An electronic correlation diagram and crystal growth mechanism, both based on aggregation, are proposed.

L14 ANSWER 5 OF 7 CA COPYRIGHT 2003 ACS
AN 98:220740 CA
TI Ceramic colors based on colloidal gold
IN Andreica, Victoria; Tinis, Viorica
PA Institutul de Cercetari pentru Industria Sticlei si Ceramicii Fine, Rom.
SO Rom., 3 pp.
CODEN: RUXXA3
DT Patent
LA Romanian
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RO 64442	B	19790115	RO 1974-78592	19740427
PRAI	RO 1974-78592		19740427		

AB Pink, purple, and violet colors were prepd. by blending ceramic base (contg. PbO 29-45, SiO2 10-35, B2O3 5-26, Na2O 3-6, and ZnO 0-2%), Ag2CO3 or Ag2O, and colloidal Au obtained by treatment of a HCl soln. of AuCl3, SnCl2, and SnCl4. Thus, 50 mL 20% AuCl3 was dild. with 2 L H2O and the soln. was mixed with a soln. of 100 g Al2(SO4)3 in 5.1 L H2O. A 2nd soln. was prepd. by mixing a soln. of 20 g SnCl2 in 10 mL 37% HCl and a soln. of 80 g SnCl4.5H2O in 40 mL 37% HCl. The 2nd and 1st solns. were blended and 190 mL 28% NH4OH was added to the blend before dissolving with 100 L H2O. The mixt. was settled to sep. a **gel** ppt. which was then washed with H2O to neutral pH. The ppt. was used to obtain purple or violet color by mixing with a ceramic base contg. Pb3O4 43.5, SiO2 10, H3BO3 25, borax 20, and ZnO 1.5%. A purple color was obtained by blending the ppt. with Ag2CO3 and ceramic base, grinding the blend, and calcining it at 600-650.degree.. A violet color was obtained in the same way but without addn. of Ag2O.

L14 ANSWER 6 OF 7 CA COPYRIGHT 2003 ACS
AN 92:207156 CA
TI Oil-containing microcapsules
IN Okimoto, Tomoyuki; Shiozaki, Tomoharu

PA Kanzaki Paper Mfg. Co., Ltd., Japan
SO Ger. Offen., 36 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2929843	A1	19800207	DE 1979-2929843	19790723
	JP 55015671	A2	19800202	JP 1978-89595	19780722
	FR 2431323	A2	19800215	FR 1979-18861	19790720
	FR 2431323	B2	19840113		
	GB 2029791	A	19800326	GB 1979-25480	19790720
PRAI	JP 1978-89595		19780722		

AB A process for prepn. of oil-contg. microcapsules consists of: (1) prepn. of an aq. system contg. .gtoreq.2 types of hydrophilic **colloid** with opposite elec. charge in which oil droplets composed of .gtoreq.1 multivalent isocyanate are dispersed; (2) coacervation of the aq. system at a temp. greater than the **gel** point of the hydrophilic **colloid** to form a suspension of coacervate-coated oil drops; and (3) cooling the coacervate suspension to a temp. less than the **gel** point of the hydrophilic **colloid** while regulating the aggregation of the particles by stirring so that multinuclear microcapsules with av. diam. 3-20 .mu. are formed. Thus, an oil soln. was prepd. by dissolving Crystal Violet lactone 3 and Benzoylleucomethylene blue 1 in kerosine 90 parts and adding to this mixt. a soln. prepd. by dissolving Coronate L (an adduct of trimethylolpropane with tolylene diisocyanate) 20 in di-Me phthalate 10 parts. An acid-treated gelatin (isoelec. point 8) 20 was dissolved in H2O 130 parts and cooled to 35.degree.. This gelatin soln. was added to the oil soln. and the mixt. was emulsified to give mononuclear capsules with av. particle size 2.8 .mu.m. The system thus obtained was poured into a stirrer provided with cooling, warm H2O (55.degree.) 100 parts was added, and the system was stirred at 300 rpm. The pH was adjusted to 5.4 and a 3% aq. soln. of CM-cellulose (av. d.p. 160, etherification degree 0.75) 75 and warm H2O (55.degree.) 400 parts were added. The system was cooled under the following conditions: 2a/D = 0.75, SP/ST = 0.24, n = 100, where D = the max. inner diam. of the app., a = the max. radius of the revolution of the stirrer, ST = the max. area of the vertical cross section of the coacervate suspension, SP = the max. area of the vertical cross section of the vol. swept by the stirrer blade, and n = the stirrer rpm. The temp. was lowered from 55.degree. at 1.degree./min. Adhesion between the capsules was initiated by lowering the liq. temp. and was essentially complete at .apprx.20.degree.. The temp. was lowered to 10.degree. which is below the **gel** point of gelatin. Subsequently the particle size of the multinuclear capsules was detd. to be 9.9 .mu.m and the vol. % of the particles 84%. To this system was added a 50% aq. soln. of glutaraldehyde 1 part/10 parts gelatin at 10.degree. and the pH was adjusted to 7.0 to complete the hardening of the capsules. To this fluid contg. the hardened capsules was added pulp powder 30 parts/100 parts oily nuclear material to give a coating compn. This compn. was coated on paper (40 g/m2) to give a coating of 5 g/m2 (dry). The capsule-coated side of the sheet was placed on an acceptor sheet of paper which was coated (6g/m2 dry) with a compn. made from a finely divided mixt. of Zn 3,5-bis(.alpha.-methylbenzyl)salicylate 8 and styrene-.alpha.-methylstyrene copolymer 2 parts, to 12 parts of which was added Al(OH)3 53, active alumina 20, ZnO 15, styrene-butadiene copolymer latex (50% solids) 30, 10% aq. soln. of modified poly(vinyl alc.) 6, and H2O 300 parts. The sheets were tested for color formation capacity, smudging or soiling under pressure of 14.7 bar for 30 s at room temp. and atm.

moisture, and color fading by moisture at 50.degree. for 100 h at 90% humidity and the results were: 0.75, 0.09, and 0.05, resp., vs. 0.70, 0.14, and 0.06, resp., for a control sheet with a coating prepd. by mixing the above oil soln. with a soln. of poly(vinyl alc.) 6 and H2O 140 parts.

L14 ANSWER 7 OF 7 CA

AN 50:88769 CA

OREF 50:16635c-i,16636a

TI Corrosion and stabilization of powdered metals. IV. Stabilization of metallic powders

AU Levin, A. I.; Pomosov, A. V.; Kolevatova, V. S.; Gurevich, I. E.; Ukshe, E. A.; Rogetkina, T. N.

SO Ural. Politekh. Inst. im. Kirova, Korroziya i Metallopokritiya, Sbornik Statei (1953), (No. 43), 138-73

DT Journal

LA Unavailable

AB Influence of electrodeposition conditions and of post-treatments on the granulometric compn., bulk vol., and other characteristics of metal powders was investigated. Cu powder was prepd. by electrodeposition from CuSO4-H2SO4 soln. Increase in the bath temp. to 55-60.degree. increased the dispersity (I) of the powder. Acid concn. had little influence on I. Increase in Cu concn. decreased I. Increase in c.d. increased I but decreased the bulk vol. When the powder was removed from the cathode periodically, longer periods caused lower current efficiency, but content of fine fractions went through a max. and then decreased with further prolongation of the periods. If the anode was of unrefined Cu, I was higher. Cl-, S-, SCN-, and I- contaminations had similar effect. From possible mechanisms which might account for changes in I, cation exhaustion in the vicinity of the cathode could explain the observed effects most consistently, and could account for changes both in limiting c.d. as well as I. To protect powders from atm. corrosion in storage, stabilization by hydrophobization was considered as the most practical method. Corrosion rates (II), contact angles, capillary rise of H2O in powders, and a qual. evaluation of wetting with H2O were used as criteria of hydrophobization. Flotation agents, such as thiocresol, amyl xanthate, and (EtO)2PS(SNa), had little effect. Most effective agents were fatty acid soaps, and benzoic, hydroxybenzoic, and anthranilic acids. II of Cu powder were decreased by a factor of 50-70 by soaking in 0.05-0.1% Na soap soln., and were stored for 3 years without visible deterioration. II vs. soap concn. curves were reminiscent of Langmuir's isotherms, exhibiting satn. effects. Nonwettability with H2O followed a similar pattern. Contact angles with hydrophobic powders were more neg. than those on pure paraffin; this was explained by hysteresis effects, which are much stronger on powders. Presence of insol. (Ca) soaps caused caking of the powders. Hydrophobized powders were easily wet by soap and saponin solns. The hydrophobic films could not be removed by repeated washing with distd. H2O at 80.degree., indicating strong chemisorption. Al, Zn, Ni, Fe, Fe oxide, ZnO, TiO2, PbO, Pb3O4, Fe and Cu sulfides, basic Pb carbonate, and other powders could be stabilized in similar manner. Stabilized powders reacted with 10% H2SO4 or NaOH only slowly, with an incubation period, or not at all. Stabilized (hydrophobized) powders made finer by energetic passage through sieves did not lose their corrosion resistance, indicating polymol. thickness of adsorbed films and their ability to spread laterally. Post-treatment of powders with Na soap soln. caused further dispersion of powders, apparently by splitting the dendrites in the weak spots, by a mechanism of two-dimensional pressure in the adsorbed film. The splitting was more pronounced in the cases of finer dendrites, e.g. in powders prepd. in presence of Cl- in the sulfate bath. Liquid soaps such as K oleate or K-rosin soap stabilized Cu powder against corrosion, but produced only slight splitting (dispersion). Mixt. of 1:1 of household

soap and saponin stabilized Cu against corrosion, but had no dispersing activity: such powders retained their microscopic fernlike structure in hydrophobization. The observed differences between Na and K soaps are explained by a better cohesion of amorphous adsorbed K soap layers and resulting strengthening of the dendrites. The cohesive action is much weaker with the cryst. Na soaps. Saponin acts as a **colloid** stabilizer, and transforms the adsorbed Na soap layers into **gel** layers capable of better cohesion. The difference in action of Na and K soaps indicates that the active adsorbed species is soap, and not the acid radical.

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=> d his

     (FILE 'HOME' ENTERED AT 11:24:40 ON 08 JUL 2003)

     FILE 'REGISTRY' ENTERED AT 11:24:58 ON 08 JUL 2003
L1           49 S ZINC ACETATE
L2        17429 S ZINC OXIDE
L3            1 S ZINC OXIDE/CN
L4            1 S ZINC ACETATE/CN
L5            1 S ZINC ACETATE DIHYDRATE/CN

     FILE 'CA' ENTERED AT 11:27:35 ON 08 JUL 2003
L6        63422 S L3
L7         5170 S L4 OR L5
L8          814 S L6 AND L7
L9        41322 S COLLOID
L10           7 S L8 AND L9
L11      414304 S GEL
L12        1283 S L6 AND L11
L13           8 S L9 AND L12
L14           7 S L13 NOT L10

     FILE 'HOME' ENTERED AT 11:36:10 ON 08 JUL 2003

     FILE 'CA' ENTERED AT 11:38:24 ON 08 JUL 2003
L15       11812 S TETRAMETHYLAMMONIUM
L16           2 S L12 AND L15
L17      437057 S KOH OR NAOH
L18          47 S L12 AND L17
L19         657 S EXCESS(3A)ZINC
L20           0 S L18 AND L19
L21          47 S L11 AND L18
L22        4648 S PRECIPITATE
L23           0 S L18 AND L22
L24       68444 S PRECIPITAT###
L25           0 S L18 AND L24
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